

LHMP ANNEX

City of Alameda

Introduction

The City of Alameda is a moderately sized city in Alameda County, California. The City has a population of 72,259 people, based on the 2000 census¹. The City's budget for 2004-2005 is \$266,413,862. The City employs 778 people.

The Planning Process

The City of Alameda has a Health and Safety Element to its General Plan that establishes development policies for the period 1990-2010. Included is a discussion of seismic, geologic, and soils hazards, fire hazards, and flooding. In addition, the City routinely enforces the requirements of the California Environmental Quality Act (CEQA) requirements (which, since 1988, have required mitigation for identified natural hazards). The City's effort has focused on building on these pre-existing programs and identifying gaps that may lead to disaster vulnerabilities in order to work on ways to address these risks through mitigation.

Many of the activities conducted by the City were fed into the planning process for the multi-jurisdictional plan. The City participated in various ABAG workshops and meetings, including the general "kick-off" meeting and the soft-story charrette. In addition, the City has provided written and oral comments on the multi-jurisdictional plan. Finally, the City provided information on facilities that are viewed as "critical" to ABAG.

Key City staff met at regular intervals in 2004 to identify and prioritize mitigation strategies appropriate for the City. Staff involved in these meetings included the Planning Manager, Finance Director, Development Services Director, Public Works Director, OES Manager, Environmental Health and Safety Coordinator, Police Captain and Emergency Planning Consultants. The general priorities, appropriate City departments and planning milestones were identified. Then, preliminary budgets and potential funding sources for strategies designated as "High" priority were identified. The City provided the opportunity for the public to comment on the DRAFT mitigation strategies at the Alameda Disaster Council meeting in December 2004. The resolution adopting this Annex will be on the City Council agenda for late April, 2005. Once adopted, the resolution will add this Annex to the ABAG multi-jurisdictional plan.

Separately in 2005, the Disaster Mitigation Plan for the City of Alameda will be completed, presented for public comment, submitted for FEMA approval and presented to the Alameda City Council for approval as an Amendment to the City's General Plan.

Hazard and Risk Assessment

¹ For complete Census information on this city, see <http://www.bayareacensus.ca.gov/>.

The ABAG multi-jurisdictional Local Hazard Mitigation Plan, to which this is an Annex, lists nine hazards that impact the Bay Area, five related to earthquakes (faulting, shaking, earthquake-induced landslides, liquefaction, and tsunamis) and four related to weather (flooding, landslides, wildfires, and drought). These hazards also impact this community, except for landslides. Landslides do not impact the City of Alameda because of the flat terrain.

The impact of tsunamis is currently unknown. While the current Tsunami Evacuation Planning Maps do not show a hazard in the City, this is because the area has not been mapped. Researchers are currently examining the impact of tsunamis in the East Bay. Preliminary work, as indicated in the ABAG multi-jurisdictional plan, appears to show that the run-up elevation would be up to 50% of that at Ocean Beach in San Francisco. If so, many areas of the City with elevations of less than 21 feet would be inundated by water. However, the research is not published and is extremely preliminary. No further work on the tsunami hazard is possible in Alameda until the maps are completed and published.

While the City has undertaken a number of general hazard mapping activities since the first Health and Safety Element was prepared, all of these maps are less detailed and are not as current as those shown on the ABAG website at: <http://quake.abag.ca.gov/mitigation/>.

Information on disasters declared in Alameda County is at:
<http://quake.abag.ca.gov/mitigation/disaster-history.html>.

The City examined the hazard exposure of City of Alameda urban land based on the information on ABAG's website at: <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. Of the 6,452 urban acres in the City,

- ◆ 536 acres are in the 100-year flood plain, while an additional 75 acres are in other flood-prone areas;
- ◆ 0 acres are subject to dam inundation;
- ◆ 0 acres are in areas of existing landslides;
- ◆ 6,403 acres are in areas of moderate, high, or very high liquefaction susceptibility;
- ◆ 6,104 acres are in the highest two categories of shaking potential, due to Alameda's proximity to the Hayward fault;
- ◆ 7 acres are subject to very high wildfire threat;
- ◆ 1,379 acres are in wildland-urban interface fire threat areas;
- ◆ Drought, though a potential problem in the City of Alameda, is not fully assessed. The City will be working with ABAG and the various water supply agencies on this issue.

The City also examined the hazard exposure of infrastructure based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. Of the 176 miles of roadway, nine miles of railroads, and 175 miles of underground pipeline in the City,

- ◆ Two miles of roadway and two miles of underground pipeline are in the 100-year flood plain, while an additional one mile of roadway and one mile of pipeline is in other flood-prone areas;
- ◆ No roads are in an area subject to dam inundation;
- ◆ No roads are in areas of existing landslides;

- ◆ 176 miles of roadway, nine miles of railroads, and 175 miles of underground pipeline are in areas of moderate, high, or very high liquefaction susceptibility;
- ◆ 164 miles of roadway, five miles of railroads, and 163 miles of underground pipeline are in the highest category of shaking potential;
- ◆ No miles of roadway, railroads, or underground pipeline are subject to wildfire threat;
- ◆ 38 miles of roads, one mile of railroad, and 38 miles of underground pipeline are in wildland-urban interface fire threat areas.
- ◆ Drought, though a potential problem in the City of Alameda, is not fully assessed. The City will be working with ABAG and the various water supply agencies on this issue.

Finally, the City examined the hazard exposure of critical health care facilities, schools, and city-owned facilities, and bridges/interchanges based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickcrit.html>. Of the critical facilities in the City,

- ◆ No critical health care facilities, schools, city-owned facilities, or bridges/interchanges are in the 100-year flood plain; one bridge/interchange is in another flood-prone area;
- ◆ No critical health care facilities, schools, city-owned facilities, or bridges/interchanges are in an area subject to dam inundation;
- ◆ No critical health care facilities, schools, city-owned facilities, or bridges/interchanges are in areas of existing landslides;
- ◆ All critical facilities are in areas of moderate, high, or very high liquefaction susceptibility – eight critical health care facilities, 24 schools, 48 city-owned critical facilities, and six locally or state owned bridges/interchanges;
- ◆ All critical facilities are in the highest two categories of shaking potential - eight critical health care facilities, 24 schools, 48 city-owned critical facilities, and six locally-or-state-owned bridges/interchanges;
- ◆ All critical facilities are in the moderate/low threat for wildfire;
- ◆ Two critical health care facilities, five schools, 14 city-owned critical facilities, and 4 locally or state owned bridges/interchanges are within the wildland-urban interface fire threat area.
- ◆ Drought, though a potential problem in the City of Alameda, is not fully assessed. The City will be working with ABAG and the various water supply agencies on this issue.

Although areas of the City are located in flood-prone areas, there are no repetitive loss properties in the City based on the information at <http://quake.abag.ca.gov/mitigation/pickflood.html>.

The City plans to work with ABAG during 2005 to improve the risk assessment information being compiled by ABAG by providing information on unreinforced masonry buildings, tiltups, and soft-story apartments located in the City.

The City of Alameda plans to work with ABAG in developing each hazard's impact and the potential level of damage to buildings, infrastructure, and critical facilities. ABAG's Annex specifically states ABAG's plans for 2005-2006.

As these impacts are not fully developed, the City has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that earthquakes (particularly shaking), liquefaction, and flooding are more important than landslides, tsunamis, and droughts.

The City of Alameda is situated parallel to the Hayward fault, which is approximately four miles away. ABAG and the U. S. Geological Survey have estimated that within this region there is a 62% potential of a magnitude 6.7 or greater earthquake occurring within the next 30 years. Based upon the modified Mercalli scale, the City of Alameda sits in the red zone showing a potential of IX-Violent Shaking that will produce heavy damage such as destroying buildings of Masonry D construction. Masonry C type buildings will be heavily damaged, sometimes with complete collapse. Masonry B type buildings will be seriously damaged, underground pipes will be broken and there will be conspicuous cracks in the ground.

The 1989 Loma Prieta Earthquake caused \$2.1 million in damages to City of Alameda properties. Damages included broken water brakes in three locations, broken sewer lines in various locations, street collapse and sand boils on numerous streets, curbs/gutters, and bulkhead damage. In addition, the dollar amount of losses to private properties is not included here. However, there was private property damage such as fuel tank displacement, water service line displacement, bulkhead/rip-rap damage, private road/sand boils, and chimney and foundation damage. Also, there was full displacement of the military runway at Alameda Point.

Mitigation Activities and Priorities

As participants in the ABAG multi-jurisdictional planning process, City of Alameda staff helped in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan. The list was discussed at a meeting of the Planning Manager, Finance Director, Development Services Director, Public Works Director, OES Manager, Environmental Health and Safety Coordinator, Police Captain and Emergency Planning Consultants in January, 2004.

During 2004, the mitigation strategies were reviewed and decisions made on each strategy's priority based on a variety of criteria, not simply on an economic cost-benefit analysis. These criteria include being technically and administratively feasible, politically acceptable, socially appropriate, legal, economically sound, and not harmful to the environment or our heritage.

Over time, we are committed to developing better hazard and risk information to use in making those trade-offs. We are not trying to create a disaster-proof region, but a disaster-resistant one.

In the City of Alameda, many of the mitigation strategies are existing programs already a part of the planning and review process, building and fire code enforcement, and development of the City's General Plan. Any new activities identified as part of this Annex will be incorporated into these existing mechanisms. Other activities will require funds that have not been identified. The City will be working to identify potential funding sources, including capital improvement budgets, bond issues, and federal or state grants.

In addition, through examination of the hazard exposure information to City-owned critical facilities supplied by ABAG, the City determined that the combination of construction type, age, and shaking exposure to Fire Station No. 3 is significant. Therefore, the City has applied for a Pre-Disaster Mitigation grant to retrofit this fire station.

Fire Station No. 3 serves 20% of the City's population, or 14,452 residents, and its mutual aid neighbors in the City of Oakland, the City of San Leandro, and the U. S. Coast Guard Island when marine emergencies occur.

Plan Monitoring, Evaluation, and Updating Process

The City of Alameda is committed to reviewing and *updating* this plan annex at least once every five years, as required by the Disaster Mitigation Act of 2000. The City Planning Director will contact ABAG four years after this plan is approved to ensure that ABAG plans to undertake the plan update process. If so, the City again plans to participate in the multi-jurisdictional plan. If ABAG is unwilling or unable to act as the lead agency in the multi-jurisdictional effort, other agencies will be contacted, including the County's Office of Emergency Services. Counties should then work together to identify another regional forum for developing a multi-jurisdictional plan.

The City Planning Director will ensure that *monitoring* of this Annex will occur. The plan will be monitored on an on-going basis. Also, any major disasters affecting the City, legal and regulatory mandates, notices from ABAG as the lead agency in this process, and other triggers will be used to initiate monitoring, evaluation, and updating. Finally, the Annex will be a discussion item on the agenda of the meeting of City department heads at least once a year in April. At that meeting, the department heads will focus on *evaluating* the Annex in light of technological and political changes during the past year, or other significant events. This group will be responsible for determining if the plan should be updated.

The *public* will continue to be involved whenever the plan is updated, and as appropriate during the monitoring and evaluation process. Prior to adoption of updates, the City will provide the opportunity for the public to comment on the updates. A public notice will be posted prior to the meeting to announce the comment period and meeting logistics.